

Online Pre-Conference

WATER, MEGACITIES AND GLOBAL CHANGE

7 – 11 December 2020

## Service Continuity 8 December 2020

*Coping mechanism during erratic rainfall,  
frequent drought and challenge to supply potable  
water to millions, a case study of Jaipur city.*

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# Summary

1. Introduction
2. Study Area
3. Major Challenges
4. Coping mechanism
5. Conclusions

# 1. Introduction: Rajasthan Water Scenario

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The driest state of India ,Largest s area of 342230 Sq.km.

Has 33 districts and 295 developments blocks.

Uncertain rainfall confined to two/three months of the year.

West of Aravali, lies Thar Desert with an average rainfall of just 318.7 mm.

The average rainfall for the State about 570 mm.( National average 1170 mm).

Out of 237 blocks in the state, 207 in dark zones, cattle owners also facing acute shortage of water.

Drought like situation in 26 out of 33 districts of Rajasthan.

During 2012-2017,state received just 15%-20 % of rainfall as per Indian Meteorological Department.

Water supply once in 24 hours for 161 towns, once in 48 hours for 49 towns, once in 72 hours in 12 towns.

The annual water table loss is 1 to 3 meters at many places.

Around 90% of drinking water is met by groundwater.

## 2. Study area, Jaipur city, India

Population: 3.5 million ( 3.1 million, 2011 census)

Demand: 500 MLD ( In Summer)

Supply : 275 MLD from Bisalpur Dam

: 100 MLD from 2000 tubewells

Gap: 125 MLD, Leakages: 10-15% , NRW issues: 45 %

Groundwater depleted by 25 metres (last one decade)

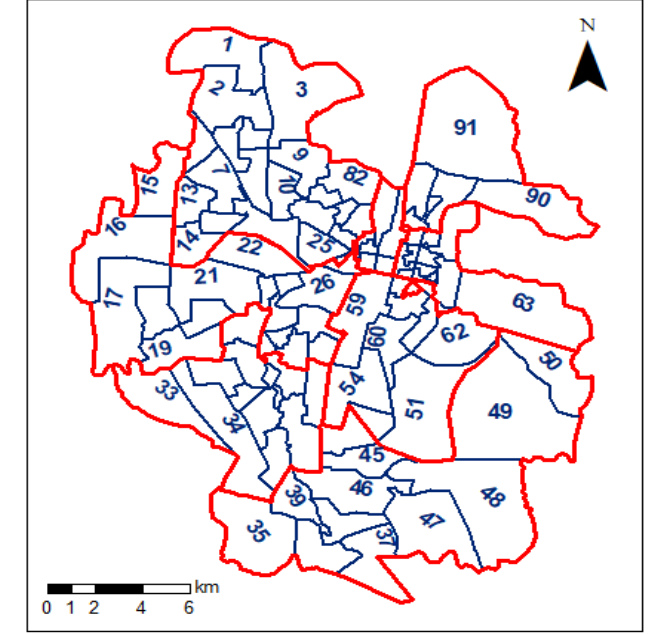
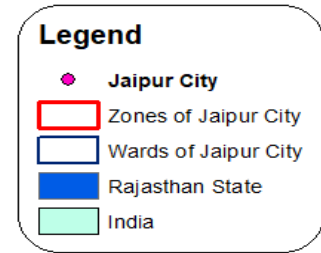
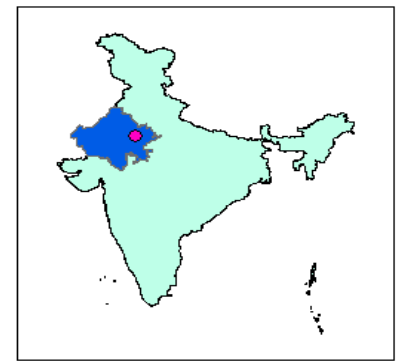
All 13 blocks are in dark zones as per CGWB.

Rampant construction/concrete flooring blocked all natural inlets.

Withdrawal rate as high as 100-110 million litres / day,  
**200%** more than the rate, Some areas it is more than **600 %**.

Real estate developers are drawing groundwater for construction and drinking purposes.

Many Areas are almost dry.



## 3. Major Challenges in supplying portable water:

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### 1. Non Revenue water :

City having NRW in the range of 40-50%.

### 2. Water abstraction through tube wells :

More than 20,000 tube wells which are not regularized.

Some areas exploitation of ground water is almost 500%.

Over exploitation has severely degraded the ground water quality.

Issues of high Flouride and Nitrate.

### 3. Non functional of metered connections :

About 60% metered connections out of 384,058 metered connections are nonfunctional .

Shortage of staff at PHED resulting low repair rate of meters, hampering revenue collection which is not systematized.

# 3. Major Challenges in supplying portable water

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## 4. Illegal water connections :

In spite of strict norms and regulations no concrete steps by PHED department to curb the menace of illegal connections

## 5. Ground water contamination/water pollution :

Almost 70% of Jaipur piped water supply has high TDS or has bacterial contamination or both the issues.

Out of total 378 MLD waste water generated only 235 MLD waste water is treated. (Census 2011).

High level untreated liquid waste finds its way back to reservoirs leading to bacterial contamination of drinking water.

## 6. Inappropriate collection of revenue

Nominal rates of water consumption from the consumers.

Substantial increase in the number of multistory buildings is also requiring higher water consumption.

# 4. Coping Mechanism :

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## 1. Bisalpur Dam:

In 2004, government started construction a pipeline to bring Bisalpur Dam water to Jaipur. Project co-financed by [Asian Development Bank](#) and [Japan International Cooperation Agency](#) . 275 MLD supplied from it out of total 500 MLD.

## 2. Tube Wells:

100 MLD is supplied through it out of total 500 MLD  
Approximately 2,000 Public Health Engineering Department controlled tube wells,

## 3. Tanker Transportation:

Till Year 2010, Nos of tanker trips during summers was about 2800.  
The present no of trips about 1000 with tanker tracking system introduced, fitted with GPS

## 4. Water quality assurance:

Disinfection by chlorination is a routine feature in the drinking water treatment systems  
100 online chlorination plants installed on tube well, with 12 electro chlorinators at pump house.

## 5. Artificial recharge structures

More than 100 roof top artificial recharge structures installed by JDA at public parks/govt buildings.  
More than hundred artificial recharging structures on tube wells which were in abandoned stage.

## 6. 24 by 7 drinking water supply in four pilot areas :

# Conclusions

1. Supplying of safe equitable potable water to 3.5 million biggest challenge for PHED Rajasthan.
2. Most severe sufferers are urban poor, paying higher cost for deteriorated water quality.
3. Communities willing to pay more ,if quality and quantity is better and improved.
4. Need for strong political will in the core interest of common man with strict measures.
5. With political stability in state, government seems to determined to deliver the needs of the community.
6. Government of India's new merged ministry "Jal Shakti", an ambitious project to bring water by tap to every end user by the year 2024.
7. An effective coordination is the need of the time between federal ministry and state government in the core interest of common man.



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**Thank you for your attention !**

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